AMENDMENTS TO THE CLAIMS:

Claim 1 (Currently amended): A detection system for a bio-separation device having a separation channel, comprising:

~~a detection section along the separation channel having a second width larger than the a first width and a transition from the first width to the second width, the detection section defining a detection zone at a distance of 100 to 500 times the second width from the transition;~~

~~means for introducing excitation radiation at the detection zone as analytes pass the detection zone; and~~

~~means for axially detecting radiation emission from the detection zone~~

a detection section along the separation channel;

the separation channel having a first width, and the detection section having a second width larger than the first width of the separation channel and a transition in width from the first width of the separation channel to the second width of the detection section;

means for introducing excitation radiation at the detection zone; and

means for detecting radiation emission axially from a location along the detection section defining a detection zone as analytes pass the detection zone, said location being defined at a distance of 100 to 500 times the second width of the detection section from the transition, said means for detecting radiation emission including an optic fiber having an end in close proximity to the detection zone.

Claim 2 (Original): The detection system as in claim 1, wherein the means for axially detecting radiation emission comprises a fiber that is directed into an end of the detection section in proximity to the detection zone.

Claim 3 (Original): The detection system as in claim 2, further comprising means for introducing excitation radiation axially at the detection zone.

Claim 4 (Original): The detection system as in claim 3, wherein the means for introducing excitation radiation axially comprises a fiber that is directed into an end of the detection section in proximity to the detection zone.

Claim 5 (Original): The detection system as in claim 4, wherein the means for axially detecting radiation emission shares the same single fiber as the means for introducing excitation radiation axially to transmit excitation radiation and radiation emission.

Claim 6 (Original): The detection system as in claim 5, further comprising a confocal optical element that transmits excitation radiation and radiation emission.

Claim 7 (Original): The detection system as in claim 6, wherein the confocal optical element comprises micro-lenses.

Claim 8 (Original): The detection system as in claim 6, wherein the confocal optical element comprises a beam combiner.

Claim 9 (Original): The detection system as in claim 1, wherein the means for detecting radiation emission from the detection zone comprises a set of micro-lenses.

Claim 10 (Original): The detection system as in claim 1, wherein the separation channel has a first width, and the detection zone has a second width larger than the first width.

Claim 11 (Previously presented): The detection system as in claim 3 wherein the means for introducing excitation radiation axially comprises a radiation source and a light transmitting material disposed between the radiation source and the detection zone to guide excitation radiation to the detection zone.

Claim 12 (Original): The detection system as in claim 11 wherein the means for introducing excitation radiation axially further comprises a boundary material that surrounds the light emitting material for guiding the excitation radiation from the excitation source to the detection zone.

Claim 13 (Original): The detection system as in claim 12 wherein the light transmitting material has a refractive index greater than the refractive index of the boundary material to guide the excitation radiation from the radiation source to the detection zone by internal reflection.

Claim 14 (Original): The detection system as in claim 13, wherein the boundary material is embodied in a tube.

Claim 15 (Original): The detection system as in claim 1 wherein the analytes comprise a material that fluoresces in the presence of the excitation radiation, and the means for detecting radiation emission comprises means for detecting fluorescence emission of the material.

Claim 16 (Currently Amended): A bio-separation instrument, comprising:

a separation channel;

means for separating a sample in the separation channel into analytes; and

a detection system, comprising:

~~(a) a detection section along the separation channel having a second width larger than the a first width and a transition from the first width to the second width, the detection section defining a detection zone at a distance of 100 to 500 times the second width from the transition;~~

~~(b) means for introducing excitation radiation at the detection zone as analytes pass the detection zone; and~~

~~(c) means for axially detecting radiation emission from the detection zone.~~

(a) a detection section along the separation channel, the separation channel having a first width, and the detection section having a second width larger than the first width of the separation channel and a transition in width from the first width of the separation channel to the second width of the detection section;

(b) means for introducing excitation radiation at the detection zone; and

(c) means for detecting radiation emission axially from a location along the detection section defining a detection zone as analytes pass the detection zone, said location being defined at a distance of 100 to 500 times the second width of the detection

section from the transition, said means for detecting radiation emission including an optic fiber having an end in close proximity to the detection zone.

Claim 17 (Currently Amended): The detection system as in claim 17 wherein the radiation emission is at least one of:

fluorescene;

chemiluminescence; and

phosphorescence.

Claim 18 (Original): A bio-separation instrument as in claim 17, wherein the separation channel is defined by a capillary column, and the means for separating a sample is configured to effect separation of the sample by electrophoresis.

Claim 19 (Withdrawn): A method for detection in a bio-separation device having a separation channel, comprising the steps of:

defining a detection zone in the separation channel;

introducing excitation radiation at the detection zone as analytes pass the detection zone; and

axially detecting radiation emission from the detection zone.

Claim 20 (Withdrawn): The method as in claim 19, wherein the analytes comprise a material that fluoresces in the presence of the excitation radiation, and the radiation emission is fluorescence emission of the material.

Claim 21 (Withdrawn): A detection system for a bio-separation device having a separation channel, comprising:

a detection section along the separation channel defining a detection zone, The separation channel having a first width, and the detection zone having a second width larger than the first width;

means for introducing excitation radiation axially at the detection zone as analytes pass the detection zone, said means for introducing radiation including an optic fiber having an end in close proximity to the detection zone; and

means for detecting radiation emission from the detection zone.